

ORDINANCE NO. 2006-\_\_\_\_\_

AN ORDINANCE AMENDING TITLE 16 OF THE METROPOLITAN CODE OF LAWS TO ADOPT THE 2006 INTERNATIONAL RESIDENTIAL CODE FOR ONE AND TWO-FAMILY DWELLINGS.

NOW, THEREFORE, BE IT ENACTED BY THE COUNCIL OF THE METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY:

Section 1. Section 16.08.010B of the Metropolitan Code of Laws is hereby amended by deleting Section 16.08.010B and substituting the following:

B. 2006 Edition of International Residential Code for One and Two-Family Dwellings, Sections R101 through and including R102.7.1; Section R106.1 through R106.1.2; R107; R109 through and including R109.1.2; Sections R109.1.4 through and including R111.3; Sections R113.1 through and including R322.1; Sections R401 through and including N1103.6 Chapter 43; Appendices E, G, & H.

Section 2. Section 16.08.014 of the Metropolitan Code of Laws is hereby amended by deleting Section 16.08.014 and substituting the following:

16.08.014 Amendments to the International Residential Code for One and Two-Family Dwellings.

The following amendments, deletions or additions to the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings are adopted by reference as fully as though copied into said Dwelling Code and thereby made a part of the Dwelling Code.

A. Section R101 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R101 and substituting the following:

SECTION R101  
SCOPE AND PURPOSE

R101.1 Scope. The provisions of this code apply to the construction, enlargement, replacement, equipment, location, removal, demolition, prefabrication, movement, alteration, repair, use, occupancy and maintenance of detached one- and two-family dwellings, bed and breakfast homestays, one-family townhouses not more than three stories in height with a separate means of egress and their accessory structures.

R101.2 Purpose. The purpose of this code is to provide minimum requirements to safeguard the public safety, health and general welfare, through affordability, structural strength, means of egress facilities, stability, sanitation, light and ventilation, energy conservation and safety to life and property from fire and other hazards attributed to the built environment.

B. Section R107.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting R107.1 Section and substituting the following:

R107.1 General. The building official is authorized to issue a permit for temporary structures and temporary uses. Such permits shall be limited as to time of service, but shall not be permitted for more than 90 days. The building official is authorized to grant extensions for demonstrated cause.

C. Section R107.3 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting R107.3 Section and substituting the following:

R107.3 Temporary power. The building official is authorized to give permission to temporarily supply and use power in part of an electrical installation before such installation has been fully completed and the final Use & Occupancy has been issued. The part covered by the temporary certificate shall comply with the requirements specified for temporary lighting, heat or power in the 2002 National Electrical Code and Chapters 33 through Chapter 42 of this code.

D. Section R201 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new Section R201.5:

201.5 Interchangeability with The International Codes. . The International Electrical Code shall be construed to be The National Electrical Code. The International Property Maintenance Code shall be construed to mean the Property Standards Code of the Metropolitan Government.

E. Section R202 of the 2003 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new definitions to Section R202:

BED AND BREAKFAST HOMESTAY--means a private home, inn or other unique residential facility located in a structure of historical significance as defined in Tennessee Code Annotated Section 68-14-503(3) offering bed and breakfast accommodations and one (1) daily meal and having less than four (4) guest rooms furnished for pay, with guest staying not more than fourteen (14) days, and where the innkeeper resides on the premises or property, or immediately adjacent to it. Guest rooms shall be established and maintained distinct and separate from the innkeeper's quarters.

BOARD--shall mean the Metropolitan Board of Fire and Building Code Appeals.

DIRECTOR--shall mean the Director of the Metropolitan Department of Codes Administration, his deputy or duly authorized representative.

FARM ACCESSORY BUILDING--shall be defined as barns, animal and poultry houses, silos, storage and feed sheds, animal shelters and similar farm structures provided that no such building or structure is designed for or intended to be used as a place of human habitation.

NORMAL MAINTENANCE REPAIRS--shall be defined as repairs to an existing building or structure, including but not limited to exterior and interior painting, papering, glazing of windows and doors, floor finishing, minor repairs to chimneys, stairs, porches, underpinning, and repairs to an existing roof.

PHYSICAL VALUE--shall mean the actual cost of replacement of a building or structure with materials of a like kind erected of a like manner to that of the original construction or the physical value shall be the fair market value or the appraised value of the building or structure, exclusive of land values, as may be recorded in the Tax Digest of the Metropolitan Government whichever shall be greater.

PREPARED ROOF COVERINGS--shall be defined as those roof coverings consisting of manufactured shingles or manufactured sheet coverings composed of asbestos cement, asphalt asbestos, asbestos organic felt, asphalt glass fiber prepared shingles or sheet roof coverings approved by Underwriters' Laboratories, Inc.

TEMPORARY--shall mean not more than 90 calendar days.

F. Section R202 of the 2003 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting the definitions of "Building Official," "Built Up Roof Covering" and "Family" substituting the following:

BUILDING OFFICIAL--shall mean the Director of the Metropolitan Department of Codes Administration.

BUILT UP ROOF COVERING--shall be defined as those roof coverings composed of layers of asphalt saturated organic felt and/or combinations of cap or base sheets applied with hot mopping asphalt and surfaced with roofing gravel, crushed slag or a similar built-up covering of layers and cold applications and surfacing cements, tar asbestos felt, roof insulation or glass fiber coverings, any one or a combination of built-up roof covering materials as approved by Underwriters' Laboratories, Inc.

FAMILY--family is an individual, two or more persons related by blood, marriage or law, or a group of not more than any five unrelated persons living together in a dwelling unit.

G. Table R301.2(1) of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Table R301.2(1) and substituting the following:

Table R301.2(1) CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

Ground Snow Load	Wind Speed MPH	Seismic Design <sup>1,2</sup>	Subject To Damage From				Winter Design Temp
			Weathering	Frost Depth	Termite	Decay	
10#	90	C	Severe	12"	Moderate	Severe	14° F

H. Section R306 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding Section R306.5:

R306.5 Clothes Washing facilities. Every dwelling unit shall be provided with a washing machine connection, a dryer electrical connection and a vent for the dryer.

I. Section R309.5 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R309.5 in its entirety.

J. Section R313 of the 2003 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R313 and substituting the following:

#### SECTION R313 SMOKE ALARMS

R313.1 Smoke detectors required. Approved single-station or multiple station smoke detectors shall be installed in accordance NFPA 72, Chapter 2. Smoke detectors shall be installed in each sleeping room, outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the dwelling, including basements and cellars, attached garages but not including crawl spaces and uninhabitable attics. In dwellings or dwelling units with split levels, a smoke detector need be installed only on the upper level, provided the lower level is less than one full story below the upper level, except that if there is a door between levels, then a detector is required on each level. All detectors shall be interconnected such that the actuation of one alarm will actuate all the alarms in the individual unit and shall provide an alarm which will be audible in all sleeping areas, All detectors shall be approved and listed and shall be installed in accordance with the manufacturer's instructions.

Exception: Heat detectors may be substituted for smoke detectors installed in cellars and attached garages.

R313.1.1 Alteration. Repairs and additions. When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings, the entire building shall be provided with smoke detectors located as required for new dwellings; the smoke detectors shall be interconnected and hard wired.

Exception: Detectors shall not be required to be interconnected and hard wired when the alterations, repairs or additions do not result in the exposure of electrical wiring by the removal of interior wall and ceiling finishes.

R313.1.2. Bed and breakfast homestays: A smoke detector shall be installed and maintained in each bedroom and outside of each separate sleeping area in the immediate vicinity of the bedrooms. A battery operated smoke detector is acceptable.

R313.2. Power source. In new construction, the required smoke detectors shall receive their primary power from the building wiring when such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for over-current protection. Smoke detectors shall be permitted to be battery operated when installed in buildings without commercial power or in buildings which undergo alterations, repairs or additions regulated by section R317.1.1.

K. Section R321 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R321 and substituting the following:

R321. Premises Identification. All buildings and structures within Metropolitan Nashville and Davidson County shall have approved address numbers posted in accordance with following:

Residences are to have their numbers at least three (3) inches in size, on a contrasting background, and in a position to be plainly visible and legible from the street or road fronting the property. The numbers may be attached to the residence or the mailbox, if the mailbox is next to the street.

L. The 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R324 in its entirety.

M. Chapter 3 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new section R325:

#### SECTION R325--HOUSE MOVING

The owner of any house, building, or structure to be moved shall make all necessary improvements required in order for said house, building or structure to comply with the requirements of this Code within 90 days from the date of the issuance of the moving permit. Extensions of such time as deemed reasonable may be granted by the Building Official upon a showing of delay caused by matters beyond the control of the owner or house mover. The application for the moving permit shall be accompanied by an application for a building permit, accompanied by complete plans and specifications showing the changes or conditions of said house, building, or structure and all contemplated improvements, signed by the owner or the owner's agent. Once the house,

building, or structure has been moved from its foundation, the house or structure must be moved from the site within 30 days.

Exception: For one and two family dwellings no construction plans are required.

N. Section R403.1 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings is hereby amended by deleting Section R403.1 and substituting the following:

**R403.1 General.** All exterior walls shall be supported on continuous solid or fully grouted masonry or concrete footings, wood foundations, or other approved structural systems which shall be of sufficient design to accommodate all loads according to Section R301 and to transmit the resulting loads to the soil within the limitations as determined from the character of the soil. Footings shall be supported on undisturbed natural soils or engineered fill. All concrete footing shall have minimum bottom reinforcement. Minimum reinforcement shall be 2-#4's continuous and shall be located a minimum of 3 inches clear from the bottom and side of the footing.

O. Table R602.3(5) of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Table R602.3(5) and substituting the following:

Table No. R602.3(5)				
MAXIMUM STUD SPACING (INCHES)				
Stud Size (inches)	Supporting Roof and Ceiling Only (inches)	Supporting One Floor Roof & Ceiling (inches)	Supporting Two Floors & Ceiling (inches)	Supporting Floor Only (inches)
2 x 4	24	16	12	24
3 x 4	24	24	16	24
2 x 5	24	24	12	24
2 x 6	24	24	16	24

1 in. = 25.4 mm

1 ft. = 0.305 m

Utility grade studs shall not be spaced more than 16 inches (406 mm.) on center, support more than a roof and ceiling and exceed 8 ft. (2438 mm) in height for exterior load bearing walls.

## MECHANICAL SECTIONS

Section 3. Section 16.16.190A of the Metropolitan Code of Laws is hereby amended by deleting Section 16.16.19A and substituting the following:

A. 2006 Edition of International Residential Code for One and Two-Family Dwellings, Sections M1201 through and including Section G2453.1 and including Chapter 43; Appendices A, B, C, and D.

Section 4. Section 16.16.230 of the Metropolitan Code of Laws is hereby amended by deleting Section 16.12.230 and substituting the following:

16.16.230 Amendments Gas/ Mechanical Sections of the International Residential Code for One- and Two-Family Dwellings.

The following amendments, deletions or additions to the 2000 Edition of the International Residential Code for One- and two-Family Dwellings are hereby adopted by reference as fully as though copied into said Dwelling Code and thereby made a part of the Dwelling Code.

A. Chapter 12 of the 2006 Edition of the International Residential code for One-and Two-Family Dwellings is hereby amended by adding the following new Section M1203:

#### SECTION M1203

##### AUTHORITY TO DISCONNECT UTILITIES IN EMERGENCIES

M1203 Authority. The building official shall have the authority to order disconnected a fuel supply or appliance that does not conform to this code; the building official shall also have the authority to order disconnected a gas utility service, or energy supplies to a building, structure, premises or equipment in case of emergency when necessary to eliminate an immediate hazard to life or property. A notice shall be attached to the energy supply or appliances stating the reason for disconnection. Such notices shall not be removed nor shall the system or appliance be reconnected until authorized by the building official.

B. Section M1601.3.4 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings is hereby amended by adding the following new Section M1601.3.4:

4. All ductwork installed in non-conditioned and not completely conditioned areas such as crawl, attic and the floor/ceiling assembly shall be insulated.

C. Section G2407.6.2 and Figure G2407.6.2 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings are hereby amended by deleting Sections G2407.6.2 and Figure G2407.6.2.

D. Section G2415.6 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings is hereby amended by adding a new Section G2415.6.1

G2415.6.1 Buried building piping. Piping shall not be installed in such a way as to be in contact with the ground or fill under a building or building floor slab. When the administrative authority determines that it is not practical to avoid the installation of

building piping that is buried or laid under a floor slab, the gas piping shall be encased in wrought iron, plastic schedule 40 pipe or steel pipe. The casing shall extend into a normally usable and accessible portion of the building. At the point where the casing terminates in the building, the space between the casing and the gas piping shall be tightly and permanently sealed with materials such as commercial casing seals, plastic, foams, cement, tars or asphalt materials. The casing shall extend at least 4 inches (102 mm) outside the building and be vented and installed in a way as to prohibit the entrance of water. The entire installation shall be such that the gas piping can be readily replaced without damage to the building.

E. Section G2417.1.1 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings is hereby amended by deleting Section G2417.1.1 and substituting the following:

G2417.1.1 Inspections. On completion of the installation, alteration, repair or replacement of gas piping, and prior to the use thereof, the building official shall be notified that the gas piping is ready for inspection.

G2417.1.1.1 Accessibility for inspection. Excavations required for the installation of underground piping shall be kept open until such time as the piping has been inspected and approved. If piping is covered or concealed before approval, it shall be exposed on the direction of the building official.

G2417.1.1.2 Required inspections. The building Official shall make the following inspections and shall either approve that portion of the work as completed, or shall notify the permit holder wherein the same fails to comply with this code.

G2417.1.1.3 Rough fuel-gas piping inspection. This inspection shall be made after gas piping authorized by the permit has been installed and before such piping has been covered or concealed or a fixture or appliance has been attached thereto. This inspection shall include a determination that the gas piping size, material and installation meet the requirements of this chapter. It shall also include an air pressure test, at which time the gas piping shall stand a pressure of not less than 10 pounds per square inch gauge (68.9 kPa gauge) and shall hold this pressure for a length of time of not less than twenty (20) minutes, with no perceptible drop in pressure. The test shall be made using air pressure only, and be verified in writing by the gas/mechanical contractor on forms authorized by the Department of Codes Administration witnessed and signed. Retest or additional certification, in special situations may be required by the Director of Codes Administration or by his/her duly authorized representative. Necessary apparatus for conducting test shall be furnished by the permit holder.

G2417.1.1.4 Final inspection. This inspection shall be made after piping authorized by the permit has been installed and after all portions thereof which are to be covered or concealed are so concealed and after all fixtures, appliances and shutoff valves have been attached thereto.



G2417.1.1.5 Other inspections. In cases where the work authorized by the permit consists of a minor installation of additional piping to piping already connected to a gas meter, the foregoing inspection may be waived at the discretion of the building official. The building official shall make such inspections as deemed advisable in order to assure that the work has been performed in accordance with the intent of this code.

F. Section G2417.4.1 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings is hereby amended by deleting Section G2417.4.1 and substituting the following:

G2417.4.1 Air Pressure Test. This inspection shall include an air pressure test, at which time the gas piping shall stand a pressure of not less than ten (10) pounds, per square inch gauge pressure and shall hold this pressure for a length of time of not less than twenty (20) minutes, with no perceptible drop in pressure. The test shall be made using air pressure only, and verified in writing by the gas/mechanical contractor on forms authorized by the Department of Codes Administration witnessed and signed. Retest or additional certification, in special situations may be required by the Director of Codes Administration or by his/her duly authorized representative. The necessary apparatus for conducting the test shall be furnished by the permit holder.

G. Section G2417.4.2 of the 2006 Edition of the International Residential Code for One- and two-Family Dwellings is hereby amended by deleting Section G2417.4.2 and substituting the following:

G2416.4.2 Air Pressure Test 2 psi and greater. Gas piping 2 psi or higher pressure must stand a pressure of a least 20 psi, but never less than ten (10) times the maximum pressure to which the piping will be subjected in operation, for a period of not less than twenty (20) minutes without showing any drop in pressure.”

## PLUMBING SECTIONS

Section 5. Section 16.12.120 of the Metropolitan Code of Laws is hereby amended by adding Section 16.08.120C as follows:

C. 2006 Edition of International Residential Code for One and Two-Family Dwellings, Sections P2501.1 through and including Section P3201.7 and including Chapter 43.

Section 6. Section 16.12.140 of the Metropolitan Code of Laws is hereby amended by deleting Section 16.12.140 and substituting the following:

16.12.140 Amendments to the Plumbing Sections of the International Residential Code for One- and Two-Family Dwellings.

The following amendments, deletions or additions to the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings are hereby adopted by reference as

fully as though copied into said dwelling code and thereby made a part of the dwelling code.

A. Section P2603.6 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2603.6 and substituting the following:

P2603.6 Freezing. Water, soil or waste pipe and sanitary "P" traps shall not be installed or permitted outside of a building, or concealed in exterior walls, in attics spaces or building overhangs above the adjacent grade. Soil and waste pipes may be installed in outside walls when adequate provisions are made to protect them from freezing. Water service pipe shall not be installed less than 24 in. below finished grade measured from the top of the pipe.

B. Section P2603.6.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2603.6.1 and substituting the following:

P2603.6.1 Sewer Depth. Building sewers that connect to private sewage disposal systems shall be a minimum of 12 inches below finished grade at the point of septic tank connection. Building sewers shall be a minimum of 12 inches below grade.

C. Chapter 26 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new Section P2609:

## SECTION P2609-BASIC PRINCIPLES

The basic principles of this Code are enunciated as basic goals in environmental sanitation worthy of accomplishment through properly designed, acceptably installed, and adequately maintained plumbing systems. Some of the details of plumbing construction must vary, but the basic sanitary and safety principles are the same. The principles may serve to define the intent.

P2609.1 Principle No.1. All buildings, structures and premises intended for human habitation, occupancy, use for employment; or the preparation or processing of food, drinks or other materials for human consumption shall be provided with an adequate, safe and potable water supply through a safe system of piping to all fixtures, appliances, appurtenances, etc.

P2609.2 Principle No. 2. Every building having plumbing fixtures installed and intended for human habitation, occupancy, or use on premises abutting on a street, alley, or easement in which there is a public sewer shall have a separate connection with the sewer.

P2609.3 Principle No. 3. A dwelling type building provided with a drainage system, a public sewer connection or a private sewage disposal system, shall have at least one

washing connection, water closet, one bathtub or shower, one lavatory, one kitchen-type sink and an adequate source of hot water, for each family unit to meet minimum basic requirements for health, sanitation and personal hygiene. Water heating facilities shall be readily accessible for emergency maintenance without entering any individual apartment or living unit, except that water heaters may be located within an apartment or living unit when supplying hot water to that unit only.

All other buildings, structures, or premises intended for human occupancy or use shall be provided with adequate sanitary facilities as may be required, but not less than one water closet and one hand washing lavatory.

P2609.4 Principle No. 4. Plumbing fixtures shall be made of smooth nonabsorbent material, shall be free from concealed fouling surfaces, and shall be located in ventilated enclosures.

P2609.5 Principle No. 5. Each fixture directly connected to the drainage system shall be equipped with a water-seal trap.

P2609.6 Principle No. 6. No substance which will clog the pipes, produce explosive mixtures, destroy the pipes or their joints, or interfere unduly with the sewage-disposal process shall be allowed to enter the building drainage system.

P2609.7 Principle No. 7. Proper protection shall be provided to prevent contamination of food, water, sterile goods, and similar materials by backflow of sewage. When necessary, the fixture, device, or appliance shall be connected indirectly with the building drainage system.

P2609.8 Principle No. 8. No water closet shall be located in a room or compartment which is not properly lighted and ventilated.

P2609.9 Principle No. 9. If water closets or other plumbing fixtures are installed in buildings where there is no sewer within a reasonable distance, suitable provision shall be made for disposing of the building sewage by some accepted method of sewage treatment and disposal.

P2609.10 Principle No. 10. Where a plumbing drainage system may be subject to backflow of sewage, suitable provisions shall be made to prevent its overflow in the building.

P2609.11 Principle No. 11. Plumbing shall be installed with due regard to preservation of the strength of structural members and prevention of damage to walls and other surfaces through fixture usage.

P2609.12 Principle No. 12. Sewage or other waste, from a plumbing system, which may be deleterious to surface or subsurface waters shall not be discharged into the ground or

into any waterway unless it has first been rendered innocuous through subjection to some acceptable form of treatment.

P2609.13 Principle No. 13. All plumbing fixtures, devices, appliances, and appurtenances shall be adequately supplied with water in sufficient volume and pressure to enable them to function properly.

P2609.14 Principle No. 14. The pipes conveying water to plumbing fixtures, appliances, devices and appurtenances shall be of sufficient size as to supply water at rates that will prevent undue pressure drops at any one fixture, when any other fixture, appliance, device or appurtenance, or group, is being flushed, operated or used.

P2609.15 Principle No. 15. There shall be no direct or indirect cross connections, either existing or potential, between a safe potable water supply and an unsafe, nonpotable supply.

P2609.16 Principle No. 16. Adequate protection shall be provided to prevent possible backflow or back siphonage of an unsafe or potentially hazardous fluid or material into a safe water system.

P2609.17 Principle No. 17. The piping and connections of the plumbing system shall be of durable materials, free from defects in workmanship and materials, and systems shall be designed and constructed to provide adequate service for a reasonable life under stresses imposed by structural loading, temperature variation, vibration and other conditions.

P2609.18 Principle No. 18. Devices for heating and storing water shall be designed and installed to prevent all danger from overheating and explosion and to prevent undue flow of hot water or steam into the cold water supply pipes.

P2609.19 Principle No. 19. Refrigerators, coolers, receptacles, sterilizers, vats, and similar equipment used for storing or holding foods, beverages, sterile goods and water conditioning equipment, etc., shall discharge into the building drainage system through an indirect waste.

P2609.20 Principle No. 20. Plumbing systems, including fixtures, shall be maintained in sanitary condition and proper working order.

P2609.21 Principle No. 21. Sewage and wastes from plumbing and drainage systems shall be adequately treated and disposed of in accordance with the requirements of the Plumbing Official.

E. Section P2801.4 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2801.4 and substituting the following:

P2801.4 Prohibited locations. Water heaters shall be readily accessible and shall not be located above a suspended ceiling or in unheated and un-insulated space. See Chapter 20 for additional requirements.

Exception:

1. Direct-vent water heaters and other water heaters can be located in unheated basements and or attached garages.
2. Appliances installed in a dedicated enclosure in which all combustible air is taken directly from the outdoors, in accordance with Section M1703. Access to such enclosure shall be through a solid door, weather-stripped in accordance with the exterior door air leakage requirements of the International Energy Conservation Code and equipped with an approved self-closing device.

F. Section P2801.5 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2801.5 and substituting the following:

P2801.5 Required pan. Where water heaters or hot water storage tanks are installed in remote locations or where leaks can cause damage to the building or its contents, the tank or heater shall be installed in a galvanized steel pan having a minimum thickness of 24 gage (0.016) or other pans listed for such use.

Exception: When water heaters are installed in a crawl space or in a basement below grade, no pan is required. The relief valve waste shall terminate 6 to 10 inches above the floor the water heater rests upon.

G. Section P2801.5.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2801.5.1 and substituting the following:

P2801.5.1 Pan Size and drain. Safety pans shall be no less than 2 in. deep and shall have a minimum clearance from the water heater of 2 in. on all sides. The capacity of the pan shall be of sufficient size to receive all drippings or condensate from the tank or heater. The pan shall be drained by an indirect waste pipe no less than 1 in. in diameter or the diameter of the outlet of the required relief valve, whichever is larger.

H. Section P2903.3 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new Section P2903.3.

P2903.3 Minimum pressure. Minimum positive pressure or twenty (20) psi is required at the building entrance for either public or private water services. No person shall install or maintain a water service connection to any dwelling where a booster pump has been installed unless such booster pump is equipped with a low pressure cut-off mechanism designed to cut off the booster pump when the pressure on the suction side of the pump drops to twenty (20) psi gage.

I. Section P2903.5 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new Section P2903.5.1:

P2903.5.1 Air Chambers. Each fixture shall be furnished with air chambers installed in the supply lines, hot and cold, close to the fixture, between the fixture shutoffs and the branch lines, installed in the upright position, connected at the bottom, consisting of pipe with the same ID size as the line installed to, 12 inches in length, with a cap or plug (or manufactured means) to seal the end of the air chamber, to reduce hazard and noise.

Exception:

Water heaters are not required to have air chambers. Water closets with exposed bottom feeds entering the location through the floor are not required to have air chambers.

J. Section P2903.9.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2903.9.1 and substituting the following:

P2903.9.1 Service Valve. A main shut-off valve on the water service line shall be installed for each dwelling unit within a building and shall be accessible in the living portion of the dwelling unit. Additionally, the water service shall be valued at the curb or property line in accordance with local requirements.

K. Section P2903.9.3 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P2903.9.3 and substituting the following:

P2903.9.3 Fixture value and access.. Valves or stops to individual fixtures or appliances shall be required and the valves or stops shall be accessible on the same floor and within 3 feet of the fixture. Valves for a manifold distribution system may be located at the manifold or at the fixture serviced. Valves to riser and branches may be installed, but shall not be required.

L. Chapter 29 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new Section P2908:

## SECTION P2908 TESTING WATER SUPPLY SYSTEMS

P2908.1 General. Upon completion of a section or of the entire water-supply system, it shall be tested under a water pressure not less than 100 psi (689 kPa) for 30 minutes or the water pipe systems may be tested with air at 125 psi if not prohibited by pipe manufacturer specifications, without evidence of leakage. The water used for tests shall be obtained from a potable source of supply.

M. Table P3002.2 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Table P3002.2 and substituting the following:

P3003.2.1 Prohibited Material. The following pipe shall not be used for building sewers or drains in one and two family dwellings:

ABS-DWV	ASTM D 2661-87A
ABS Sewer Pipe	ASTM D 2751-88
Bituminized fiber drain and sewer pipe	ASTM D 1861
PSP PVC X	D 3033-85
PSM PVC	D 3034-88

Table 3002.2.2 BUILDING SEWER PIPING	
Cast-iron pipe and fittings	ASTM A 74
Cast-iron pipe and fittings (hubless)	CISPI HS74
Cast-iron soil pipe and fittings for hubless sanitary system	CISPI 301
Seamless copper tube	ASTM B 75
Copper water tube	ASTM B 88
Concrete sewer, storm drain and culvert pipe	ASTM C 14
Compression joints for vitrified clay pipe and fittings	ASTM C 425
Vitrified clay pipe and fittings	ASTM C 700
PVC/DV%TV pipe and fittings	ASTM D 2665
3.25-inch O.D. PVC/DVVV pipe and fittings	ASTM D 2949
Type PSM/PVC sewer pipe and fittings	ASTM D 3034
Joints for drain and sewer plastic pipe using flexible elastomeric seals	ASTM D 3212
Co-extruded PVC Schedule 40, PS 50 or PS - 100 plastic pipe with cellular core	ASTM F 891
Copper drainage tube (DWV)	ASTM B 306
Mechanical couplings for drain waste and vent pipe and sewer pipe	CSA B 602M
Solvent cement for PVC-DVVV pipe and fittings	ASTM D 2564
Socket bell for PVC-DWV pipe and fittings	ASTM D 2672
Primers for solvent-cemented PVC-DWV pipe and fittings	ASTM F 656

Couplings for hubless cast-iron soil pipe and fittings	CISPI 310
Shielded couplings joining cast-iron soil pipe and fittings	ASTM C 1277
Cast-iron soil pipe and fittings for hubless	ASTM A 888

Co-extruded composite PVC DWV schedule 40 IPS pipe (solid or cellular core) solvent cement fittings	ASTM F 1488 ASTM D 2564 ASTM D 2665 ASTM F 891
Co-extruded composite PVC DWV IPS-DR-PS in PS35, PS50, PS100, PS140, PS200 solvent cement fittings	ASTM F 1488 ASTM D 2564 ASTM D 2665 ASTM F 891
Co-extruded composite PVC sewer and drain pipe DR-PS in PS35, PS50, PS100, PS140, PS200 solvent cement fittings	ASTM F 1488 ASTM D 2564 ASTM D 3034 ASTM F 789

N. Section P3005.2.7 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P3005.2.7 and substituting the following:

P3005.2.7 Building drain and building sewer junction. There shall be a cleanout near the junction of the building drain and building sewer. This cleanout shall be outside the building wall and brought up to finish grade.

O. Section P3005.2 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding a new Section P3005.2.12:

P3005.2.12 Concealed Piping. Cleanouts on concealed piping or piping under a floor slab or in a crawl space of less than 24 inches in height or a plenum shall be extended through and terminate flush with the finished wall, floor or ground surface or shall be extended to the outside of the building. Cleanout plugs shall not be covered with cement, plaster or any other permanent finish material. Where it is necessary to conceal a cleanout or to terminate a cleanout in an area subject to vehicular traffic, the covering plate shall be of an approved type designed and installed for this purpose.

P. Section P3005.2.10 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting section P3005.2.10.

Q. Section P3005.4.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P3005.4.1 and substituting the following:



P3005.4.1 Fixture branch and stack sizing. Fixture branch and stacks shall be sized using the following general procedure:

1. Branches and stacks shall be sized according to Table P3005.4.1. Below-grade drain pipes shall not be less than 2 inches in diameter.

2. Minimum Stack Size. Drain stack shall not be smaller than the largest horizontal branch connected, with the following exception:

2.1. A 4-inch-by-3-inch (102 mm by 76 mm) closet bend or flange or a 4-inch (102 mm) closet bend into a 3-inch (76 mm) stack tee shall be acceptable (see Section P3005.1.4).

R. Table P3005.4.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new footnotes c and d :

c. No building sewer shall be less than four (4) inches in size, and the first two and one-half (2 1/2) feet from the main tap shall be a minimum of six (6) inches in diameter.

d. a maximum of 3 water closets shall be installed on a single 3 inch drain line.

S. Section P3008 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting section P3008.

T. Chapter 30 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following new Section P3009:

#### SECTION P3009--SWIMMING POOLS

Piping carrying waste water from swimming or wading pools, including pool drainage, backwash from filters, water from scum gutter drains or floor drains that serve walks around pools, shall be connected to the sanitary sewer system. They shall be installed as an indirect waste utilizing a circulation pump, if necessary, when indirect waste line is below the sewer grade.

U. Section P3102.1 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P3102.1 and substituting the following:

P3102.1. Main vent required. Every buildings shall have a main vent that is either a vent stack or a stack vent. Such vent size shall be a minimum 3 inches in diameter and shall run undiminished in size and as directly as possible from the building drain up through to the open air above the roof. Additional branches may be served by air admittance values installed in accordance with Section P3114.

V. Section P3201.2 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section P3201.2 and substituting the following:

P3201.2 Trap seals. Traps shall have a liquid seal of not less than 2 inches (51 mm) and not more than 4 inches (102 mm). Traps that could lose their seal due to evaporation because of infrequent use, such as floor drains, shall be fitted with a trap primer.

## ELECTRICAL SECTIONS

Section 7. Section 16.20.140 of the Metropolitan Code of Laws is hereby amended by deleting Section 16.20.140 and substituting the following:

A. 2006 Edition of International Residential Code for One and Two-Family Dwellings, Sections E3301 through and including Section E4204.5 are hereby deleted and substituting the following:

B, 2002 Edition of the National Electrical Code, Section 80 through Section 80.13, Section 90 through Section 490.74, Section 550 through Section 555.23, Section 620 through 620.91, Section 680 through 680.74, Section 720 through 800.53 and Chapter 9, Annex B and C.

Section 8. Section 16.20.154 of the Metropolitan Code of Laws is hereby amended by deleting Section 16.20.154 and substituting the following:

16.20.154 Amendments to the electrical sections of the International Residential Code for One- and Two-Family Dwellings.

The following amendments, deletions or additions to the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings are hereby adopted by reference as fully as though copied into said dwelling code and thereby made a part of the one and two dwelling code.

A. Section R502.8 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R502.8 and substituting the following:

R502.8 Drilling and notching. Wood-framed structural members shall not be drilled, notched or altered in any manner except as provided for in this code.

R502.8.1 Notching joists and rafters. Notches on the ends of joists shall not exceed one-fourth (1/4) the actual depth. Notches for pipes in the top or bottom of joists shall not exceed one-sixth (1/6) of the actual depth and shall not be located in the middle one-third (1/3) of the span.

R502.8.2 Notching studs. In the exterior walls and bearing partitions, any wood stud may be cut or notched to a depth not exceeding twenty-five percent (25%) of its actual width.

Cutting or notching of studs to a depth not greater than forty percent (40%) of the actual width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition.

R502.8.3 Protection at notches. The cable or raceway at those points is protected against nails or screws by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick installed before the building finish is applied.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

R502.8.4 Drilling joists and rafters. Holes bored for pipes or cable shall not be within two (2) inches of the top or bottom of the joist and the diameter of any such hole shall not exceed one-third (1/3) of the actual depth of the joist.

R502.8.5 Drilling studs. A hole not greater in diameter than forty percent (40%) of the studs actual width may be bored in any wood stud. Bored holes not greater than sixty percent (60%) of the actual width of the stud are permitted in nonbearing partitions or in any wall where each bored stud is doubled provided no more than two such successive double studs are bored. In no case shall the edge of the bored hole be nearer than five-eighths inch (5/8) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.

R502.8.6 Protection at holes. Holes bored less than 1 1/4 in. (31.8 mm) from the nearest edge of the wood member, the cable or raceway shall be protected from penetration by screws or nails by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick, and appropriate length and width installed to cover the area of the wiring.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

B. Section R602.6 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R602.6 and substituting the following:

R602.6 Drilling and notching. Wood-framed structural members shall not be drilled, notched or altered in any manner except as provided for in this code.

R602.6.1 Notching joists and rafters. Notches on the ends of joists shall not exceed one-fourth (1/4) the actual depth. Notches for pipes in the top or bottom of joists shall not exceed one-sixth (1/6) of the actual depth and shall not be located in the middle one-third (1/3) of the span.

R602.6.2 Notching studs. In the exterior walls and bearing partitions, any wood stud may be cut or notched to a depth not exceeding twenty-five percent (25%) of its actual width. Cutting or notching of studs to a depth not greater than forty percent (40%) of the actual

width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition.

R602.6.3 Protection at notches. The cable or raceway at those points is protected against nails or screws by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick installed before the building finish is applied.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

R602.6.4 Drilling joists and rafters. Holes bored for pipes or cable shall not be within two (2) inches of the top or bottom of the joist and the diameter of any such hole shall not exceed one-third (1/3) of the actual depth of the joist.

R602.6.5 Drilling studs. A hole not greater in diameter than forty percent (40%) of the studs actual width may be bored in any wood stud. Bored holes not greater than sixty percent (60%) of the actual width of the stud are permitted in nonbearing partitions or in any wall where each bored stud is doubled provided no more than two such successive double studs are bored. In no case shall the edge of the bored hole be nearer than five-eighths inch (5/8) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.

R602.6.6 Protection at holes. Holes bored less than 1 1/4 in. (31.8 mm) from the nearest edge of the wood member, the cable or raceway shall be protected from penetration by screws or nails by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick, and appropriate length and width installed to cover the area of the wiring.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

C. Section R802.7 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section R802.7 and substituting the following:

R802.7 Drilling and notching. Wood-framed structural members shall not be drilled, notched or altered in any manner except as provided for in this code.

R802.7.1 Notching joists and rafters. Notches on the ends of joists shall not exceed one-fourth (1/4) the actual depth. Notches for pipes in the top or bottom of joists shall not exceed one-sixth (1/6) of the actual depth and shall not be located in the middle one-third (1/3) of the span.

R802.7.2 Notching studs. In the exterior walls and bearing partitions, any wood stud may be cut or notched to a depth not exceeding twenty-five percent (25%) of its actual width. Cutting or notching of studs to a depth not greater than forty percent (40%) of the actual

width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition.

R802.7.3 Protection at notches. The cable or raceway at those points is protected against nails or screws by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick installed before the building finish is applied.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

R802.7.4 Drilling joists and rafters. Holes bored for pipes or cable shall not be within two (2) inches of the top or bottom of the joist and the diameter of any such hole shall not exceed one-third (1/3) of the actual depth of the joist.

R802.7.5 Drilling studs. A hole not greater in diameter than forty percent (40%) of the studs actual width may be bored in any wood stud. Bored holes not greater than sixty percent (60%) of the actual width of the stud are permitted in nonbearing partitions or in any wall where each bored stud is doubled provided no more than two such successive double studs are bored. In no case shall the edge of the bored hole be nearer than five-eighths inch (5/8) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.

R802.7.6 Protection at holes. Holes bored less than 1 1/4 in. (31.8 mm) from the nearest edge of the wood member, the cable or raceway shall be protected from penetration by screws or nails by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick, and appropriate length and width installed to cover the area of the wiring.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

D. Section E3806 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following Section E3806.12 :

E3806.12 Penetrations of fire-resistance-rated assemblies. Through penetrations of fire-resistance-rated wall or floor assemblies shall comply with Sections E3806.12.1 or E3806.12.2 and E3806.12.3.

Exception: Where the penetrating items are steel, ferrous or copper pipes or steel conduits, the annular space shall be permitted to be protected as follows:

1. In concrete or masonry wall or floor assemblies where the penetrating item is a maximum 6 inches (152 mm) nominal diameter and the opening is a maximum 144 square inches (92 900 mm<sup>2</sup>), concrete, grout or mortar shall be permitted where installed to the full thickness of the wall or floor assembly or the thickness required to maintain the fire-resistance rating.

2. The material used to fill the annular space shall prevent the passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 time temperature fire conditions under a minimum positive pressure differential of 0.01 inch of water (3 Pa) at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated.

E3806.12.1 Fire-resistance-rated assembly. Penetrations shall be installed as tested in the approved fire-resistance-rated assembly.

E3806.12.2 Penetration firestop and draftstops. Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814, with a minimum positive pressure differential of 0.01 inch of water (Pa) and shall have a F rating of not less than the required fire-resistance rating of the wall or floor/ceiling assembly penetrated.

E3806.12.3 Membrane penetrations. Membrane penetrations shall comply with Section 300.21.1. Where walls are required to have a minimum 1 hour fire-resistance rating, recessed light fixtures shall be so installed such that the required fire resistance will not be reduced.

Exceptions:

1. Steel electrical boxes that do not exceed 16 square inches (0.0103m<sup>2</sup>) in area provided the total area of such openings does not exceed 100 square inches (0.0645m<sup>2</sup>) for any 100 square feet (9.29m<sup>2</sup>) of fire resistant wall area. Outlet boxes on opposite sides of the wall shall be separated as follows:

- 1.1. By a horizontal distance of not less than 24 inches, or
- 1.2. By a horizontal distance of not less than the depth of the wall cavity when the wall cavity is filled with cellulose loose-fill or mineral fiber insulation, or
- 1.3. By molded fire blocking, or
- 1.4. By other listed materials and methods.

2. Two-hour fire-resistance-rated nonmetallic electrical outlet boxes shall be installed in accordance with their listing.

E. Section R313.2 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting R313.2 and substituting the following:

R313.2 Location of Smoke Detectors.

R313.2.1 Residential units general. Approved single-station or multiple station smoke detectors shall be installed in accordance with NFPA 72, Chapter 2, within one and two family dwelling, and townhouses. Where more than one detector is required to be installed within an individual dwelling unit, the detectors shall be wired in such a manner that the actuation of one alarm will actuate all of the alarms in the individual unit.

R313.2.2 Dwelling unit locations. In dwelling units, smoke detectors shall be installed in each sleeping room, outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the dwelling, including basements, cellars and attached garages but not including crawl spaces and uninhabitable attics.

Exception: Heat detectors may be substituted for smoke detectors in cellars and attached garages.

R313.2.3 Additional dwelling unit split-level locations. In dwelling units with split levels, a smoke detector need be installed only on the upper level, provided the lower level is less than one full story below the upper level, except that if there is a door between levels, then a detector is required on each level. All detectors shall be interconnected such that actuation of one alarm will actuate all the alarms in the individual unit and shall provide an alarm that will be audible in all sleeping areas.

F. Section E3305.4 of the 2002 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3305.4 and substituting the following:

E3305.4 Location of clear spaces. Required working space shall not be designated for storage. Panel boards and over current protection devices shall not be located in clothes closets, bathrooms, or within six (6) feet of any sink or lavatory.

G. Section E3305.7 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3305.7 and substituting the following:

E3305.7 Headroom. The minimum headroom for working spaces for service equipment and panel boards shall be 6 1/2 feet (1981 mm). Where the electrical equipment exceeds 6 1/2 ft (1981 mm) in height, the minimum headroom shall be not less than the height of the equipment.

H. Section E3501.6.2 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3501.6.2 and substituting the following:

E3501.6.2 Service disconnect location. The service disconnecting means shall be installed at a readily accessible location either outside of a building or structure, or inside. The main service disconnecting means shall not be located more than five (5) feet from the point where the service conductors enter a building or other structure. Service disconnecting means shall not be installed in bathrooms.

I. Section E3501.7 of the 2002 Edition of the National Electrical Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3501.7 and substituting the following:

E3501.7 Maximum number of disconnects. The service disconnecting means shall consist of not more than six switches or six circuit breakers mounted in a single enclosure or in a group of separate enclosures of more than 225 amps. Service equipment shall have only one (1) main means of disconnecting services of 225 amps or less.

J. Section E3502.1 of the 2002 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3502.1 and substituting the following:

E3502.1 Branch-circuit and feeder ampacity. Branch-circuit conductors shall have an ampacity not less than the maximum load to be served. In addition, conductors of multi-outlet branch circuits supplying receptacles for cord- and plug-connected portable loads shall have an ampacity of not less than the rating of the branch circuit. Cable assemblies where the neutral conductor is smaller than the ungrounded conductors shall be so marked. Aluminum and copper-clad aluminum conductors shall not be used on any branch circuit wiring.

K. Section E3801.2.2(1) of the 2006 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is amended by deleting Section E3801.2.2(1) and substituting the following:

1. Any wall space that is 2 feet (610mm) or more in width, (including space measured around corners), and that is unbroken at the floor line by doorways, fireplaces, and similar openings. See Figure 3801.2.

Exception: When a side swinging bedroom door is open 90 degrees and within 6' of a wall parallel to the 90 degree open door, the wall space may be increased to 4 feet when measured along the floor line from the hinge side of the door.

L. Section E3801.2.3 of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3801.2.3 and substituting the following:

E3801.2.3 Floor receptacles. Receptacle outlets in floors shall not be counted as part of the required number of receptacle outlets unless located within 18 in. (457 mm) of the wall. The receptacle outlets required, by this section, shall be in addition to any receptacle that is part of any lighting fixture or appliance, located within cabinets or cupboards, or located over 5 1/2 feet (1676 mm) above the floor.

Exception: Permanently installed electric baseboard heaters equipped with factory installed receptacle outlets, or outlets provided as a separate assembly by the baseboard manufacturer, shall be considered equivalent to the required outlets or outlets for wall space used by such permanently installed heaters. Such receptacle outlets shall not be connected to the heater circuits.



M. Section E3801.3 of the 2002 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3801.3 and substituting the following:

E3801.3 Small appliance receptacles. The two or more 20 ampere small appliance branch circuits required by Section E3603.2 shall serve all receptacle outlets, including refrigerating appliances, in the kitchen, pantry, breakfast room, dining room, or similar area of a dwelling unit. Such circuits, whether two or more are used, shall serve no other outlets.

Exceptions:

1. Receptacle outlets located in such rooms and areas to provide power for electrical wall clocks, gas fired cooking appliances, and receptacle outlets located outdoors shall be supplied by the small appliance branch circuits or by other branch circuits.

2. Where located in such rooms and areas, receptacle outlets installed to supply only motor loads and switched receptacles outlets provided in lieu of lighting outlets shall not be required to be supplied by the small appliance branch circuits.

N. Section 3801 of the 2006 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by adding the following Section E3801.12 :

E3801.12 Outdoor outlets. At least one receptacle outlet accessible at grade level shall be installed outdoors at the front and back of each dwelling unit having direct access to grade. For dwelling units with patios, balconies or decks, an outdoor receptacle outlet shall be installed adjacent to door opening on to the patio, balcony or deck.

O. Section E3808.7 of the 2006 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3808.7 and substituting the following:

E3808.7 Load-side equipment. A grounded circuit conductor shall not to be used for grounding noncurrent-carrying metal parts of equipments on the load side of the service disconnecting means.

1. This section shall apply to existing branch-circuit installations only. New branch-circuit installations shall comply with Section 3808.9. For frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances shall be grounded in the manner specified by Section 3808.10; or, except for mobile homes and recreational vehicles, shall be permitted to be grounded to the grounded circuit conductor if all of the conditions indicated in Section 3808.10 are met.

2. For separate buildings, in accordance with Section E3507.3.2.

P. Section E3903.10 of the 2006 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E3903.10 and substituting the following:

E3903.10 Bathtub and shower areas. No parts of cord-connected fixtures, hanging fixtures, lighting track, pendants, or ceiling fans shall be located within a zone measured 3 ft. (914 mm) horizontally and 8 ft. (2.44 m) vertically from the top of the bathtub rim. No switches shall be located within this zone unless the fixture is protected by ground-fault circuit interrupter protection for personnel. This zone is all encompassing and includes the zone directly over the tubs and/or shower areas.

Q. Section E4001.3 of the 2006 Edition of the 2006 Edition of the International Residential Code for One- and Two-Family Dwellings is hereby amended by deleting Section E4001.3 and substituting the following:

422.16 Flexible cords. Cord- and plug-connected appliances shall use cords suitable for the environment and physical conditions likely to be encountered. Flexible cords shall only be used where the appliance is listed to be connected with a flexible cord. Specific appliances have additional requirements as specified in Table E4001.3. The receptacles for the specific appliances contained in Table E4001.3 shall be on a separate branch circuit. (See Section E3809.

Section 9. Section 16.20.150 of the Metropolitan Code of Laws is hereby amended by deleting Section 16.20.150 and substituting the following:

16.20.150 Amendments to the electrical sections of the National Electrical Code for applicable to One- and Two-Family Dwellings.

The following amendments, deletions or additions to the 2002 Edition of the National Electrical Code are hereby adopted by reference as fully as though copied into said dwelling code and thereby made a part of the one and two family dwelling code.

A. Section 300.4(A) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 300.4(A) and substituting the following:

300.4(A) Drilling and notching. Wood-framed structural members shall not be drilled, notched or altered in any manner except as provided for in this code.

300.4(A).1 Notching joists and rafters. Notches on the ends of joists shall not exceed one-fourth (1/4) the actual depth. Notches for pipes in the top or bottom of joists shall not exceed one-sixth (1/6) of the actual depth and shall not be located in the middle one-third (1/3) of the span.

300.4(A).2 Notching studs. In the exterior walls and bearing partitions, any wood stud may be cut or notched to a depth not exceeding twenty-five percent (25%) of its actual width. Cutting or notching of studs to a depth not greater than forty percent (40%) of the

actual width of the stud is permitted in nonbearing partitions supporting no loads other than the weight of the partition.

300.4(A).3 Protection at notches. The cable or raceway at those points is protected against nails or screws by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick installed before the building finish is applied.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

300.4(A).4 Drilling joists and rafters. Holes bored for pipes or cable shall not be within two (2) inches of the top or bottom of the joist and the diameter of any such hole shall not exceed one-third (1/3) of the actual depth of the joist.

300.4(A).5 Drilling studs. A hole not greater in diameter than forty percent (40%) of the studs actual width may be bored in any wood stud. Bored holes not greater than sixty percent (60%) of the actual width of the stud are permitted in nonbearing partitions or in any wall where each bored stud is doubled provided no more than two such successive double studs are bored. In no case shall the edge of the bored hole be nearer than five-eighths inch (5/8) to the edge of the stud. Bored holes shall not be located at the same section of stud as a cut or notch.

300.4(A).6 Protection at holes. Holes bored less than 1 1/4 in. (31.8 mm) from the nearest edge of the wood member, the cable or raceway shall be protected from penetration by screws or nails by a steel plate or bushing, at least 1/16 in. (1.59 mm) thick, and appropriate length and width installed to cover the area of the wiring.

Exception: Steel plates shall not be required to protect rigid metal conduit, intermediate metal conduit, rigid nonmetallic conduit, or electrical metallic tubing.

B. Section 300.21 of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 300.21 and substituting the following:

300.21 Penetrations of fire-resistance-rated assemblies. Through penetrations of fire-resistance-rated wall or floor assemblies shall comply with Sections 300.21 or 300.21.1 and 300.21.2

Exception: Where the penetrating items are steel, ferrous or copper pipes or steel conduits, the annular space shall be permitted to be protected as follows:

1. In concrete or masonry wall or floor assemblies where the penetrating item is a maximum 6 inches (152 mm) nominal diameter and the opening is a maximum 144 square inches (92 900 mm<sup>2</sup>), concrete, grout or mortar shall be permitted where installed to the full thickness of the wall or floor assembly or the thickness required to maintain the fire-resistance rating.

2. The material used to fill the annular space shall prevent the passage of flame and hot gases sufficient to ignite cotton waste when subjected to ASTM E 119 time temperature fire conditions under a minimum positive pressure differential of 0.01 inch of water (3 Pa) at the location of the penetration for the time period equivalent to the fire-resistance rating of the construction penetrated.

300.21.1 Fire-resistance-rated assembly. Penetrations shall be installed as tested in the approved fire-resistance-rated assembly.

300.21.2 Penetration firestop and draftstops. Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814, with a minimum positive pressure differential of 0.01 inch of water (Pa) and shall have a F rating of not less than the required fire-resistance rating of the wall or floor/ceiling assembly penetrated.

300.21.3 Membrane penetrations. Membrane penetrations shall comply with Section 300.21.1. Where walls are required to have a minimum 1 hour fire-resistance rating, recessed light fixtures shall be so installed such that the required fire resistance will not be reduced.

Exceptions:

1. Steel electrical boxes that do not exceed 16 square inches (0.0103m<sup>2</sup>) in area provided the total area of such openings does not exceed 100 square inches (0.0645m<sup>2</sup>) for any 100 square feet (9.29m<sup>2</sup>) of fire resistant wall area. Outlet boxes on opposite sides of the wall shall be separated as follows:

- 1.1. By a horizontal distance of not less than 24 inches, or
- 1.2. By a horizontal distance of not less than the depth of the wall cavity when the wall cavity is filled with cellulose loose-fill or mineral fiber insulation, or
- 1.3. By molded fire blocking, or
- 1.4. By other listed materials and methods.

2. Two-hour fire-resistance-rated nonmetallic electrical outlet boxes shall be installed in accordance with their listing.

C. Section 300.21 of the 2002 Edition of the National Electrical Code is hereby amended by adding the following new Section 300.21(C):

300.21(C) Smoke Detectors.

300.21(C).1 Residential units general. Approved single-station or multiple station smoke detectors shall be installed in accordance with NFPA 72, Chapter 2, within one and two family dwelling, and townhouses. Where more than one detector is required to be installed within an individual dwelling unit, the detectors shall be wired in such a manner that the actuation of one alarm will actuate all of the alarms in the individual unit.

300.21(C).2 Dwelling unit locations. In dwelling units, smoke detectors shall be installed in each sleeping room, outside of each separate sleeping area in the immediate vicinity of

the bedrooms and on each additional story of the dwelling, including basements, cellars and attached garages but not including crawl spaces and uninhabitable attics.

Exception: Heat detectors may be substituted for smoke detectors in cellars and attached garages.

300.21(C).3 Additional dwelling unit split-level locations. In dwelling units with split levels, a smoke detector need be installed only on the upper level, provided the lower level is less than one full story below the upper level, except that if there is a door between levels, then a detector is required on each level. All detectors shall be interconnected such that actuation of one alarm will actuate all the alarms in the individual unit and shall provide an alarm which will be audible in all sleeping areas.

300.21(C).4 Alteration, repairs and additions. When interior alterations, repairs or additions requiring a permit occur, or when one or more sleeping rooms are added or created in existing dwellings or dwelling units, the entire dwelling unit shall be provided with smoke detectors located as required for new dwellings; the smoke detectors shall be interconnected and hard wired.

Exception: Detectors shall not be required to be interconnected and hard wired when the alterations, repairs or additions do not result in the exposure of electrical wiring by the removal of interior wall and ceiling finishes.

D. Section 110.26 of the 2002 Edition of the National Electrical is hereby amended by deleting Section 110.26 and substituting the following:

110.26(B) Location of clear spaces. Required working space shall not be designated for storage. Panel boards and over current protection devices shall not be located in clothes closets, bathrooms, or within six (6) feet of any sink or lavatory.

E. Section 110.26(E) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 110.26(E) and substituting the following:

110.26(E) Headroom. The minimum headroom for working spaces for service equipment and panel boards shall be 6 1/2 feet (1981 mm). Where the electrical equipment exceeds 6 1/2 ft (1981 mm) in height, the minimum headroom shall be not less than the height of the equipment.

F. Section 230.70(A)(1) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 230.70(A)(1) and substituting the following:

230.70(A)(1) Service disconnect location. The service disconnecting means shall be installed at a readily accessible location either outside of a building or structure, or inside. The main service disconnecting means shall not be located more than five (5) feet from the point where the service conductors enter a building or other structure. Service disconnecting means shall not be installed in bathrooms.

G. DELETE G Section 230.70(1) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 230.70(1) and substituting the following:

230.70.1 Maximum number of disconnects. The service disconnecting means shall consist of not more than six switches or six circuit breakers mounted in a single enclosure or in a group of separate enclosures of more than 225 amps. Service equipment shall have only one (1) main means of disconnecting services of 225 amps or less.

H. Section 210.1 of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 210.1 and substituting the following:

210.1 Branch-circuit and feeder ampacity. Branch-circuit conductors shall have an ampacity not less than the maximum load to be served. In addition, conductors of multi-outlet branch circuits supplying receptacles for cord- and plug-connected portable loads shall have an ampacity of not less than the rating of the branch circuit. Cable assemblies where the neutral conductor is smaller than the ungrounded conductors shall be so marked. Aluminum and copper-clad aluminum conductors shall not be used on any branch circuit wiring.

I. DELETE I Section 210.52(A)(2) of the 2002 Edition of the National Electrical Code is amended by deleting Section 210.52(A)(2) and substituting the following:

1. Any wall space that is 2 feet (610mm) or more in width, (including space measured around corners), and that is unbroken at the floor line by doorways, fireplaces, and similar openings. See Figure 3801.2.

Exception: When a side swinging bedroom door is open 90 degrees and within 6' of a wall parallel to the 90 degree open door, the wall space may be increased to 4 feet when measured along the floor line from the hinge side of the door.

J. Section 210.52(A)(3) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 210.52(A)(3) and substituting the following:

210.52(A)(3) Floor receptacles. Receptacle outlets in floors shall not be counted as part of the required number of receptacle outlets unless located within 18 in. (457 mm) of the wall. The receptacle outlets required, by this section, shall be in addition to any receptacle that is part of any lighting fixture or appliance, located within cabinets or cupboards, or located over 5 1/2 feet (1676 mm) above the floor.

Exception: Permanently installed electric baseboard heaters equipped with factory installed receptacle outlets, or outlets provided as a separate assembly by the baseboard manufacturer, shall be considered equivalent to the required outlets or outlets for wall space used by such permanently installed heaters. Such receptacle outlets shall not be connected to the heater circuits.

K. Section 210.53(B)(1) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 210.53(B)(1) and substituting the following:

210.53(B)(1) Small appliance receptacles. The two or more 20 ampere small appliance branch circuits required by Section E3603.2 shall serve all receptacle outlets, including refrigerating appliances, in the kitchen, pantry, breakfast room, dining room, or similar area of a dwelling unit. Such circuits, whether two or more are used, shall serve no other outlets.

Exceptions:

1. Receptacle outlets located in such rooms and areas to provide power for electrical wall clocks, gas fired cooking appliances, and receptacle outlets located outdoors shall be supplied by the small appliance branch circuits or by other branch circuits.
2. Where located in such rooms and areas, receptacle outlets installed to supply only motor loads and switched receptacles outlets provided in lieu of lighting outlets shall not be required to be supplied by the small appliance branch circuits.

L. Section 210.52(E) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 210.52(E) and substituting the following:

210.52(E) Outdoor outlets. At least one receptacle outlet accessible at grade level shall be installed outdoors at the front and back of each dwelling unit having direct access to grade. For dwelling units with patios, balconies or decks, an outdoor receptacle outlet shall be installed adjacent to door opening on to the patio, balcony or deck.

M. Section 250.142(B) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 250.142(B) and substituting the following:

250.142(B) Load-side equipment. A grounded circuit conductor shall not to be used for grounding noncurrent-carrying metal parts of equipments on the load side of the service disconnecting means.

1. This section shall apply to existing branch-circuit installations only. New branch-circuit installations shall comply with Section 3808.9. For frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers, and outlet or junction boxes that are part of the circuit for these appliances shall be grounded in the manner specified by Section 3808.10; or, except for mobile homes and recreational vehicles, shall be permitted to be grounded to the grounded circuit conductor if all of the conditions indicated in Section 3808.10 are met.

2. For separate buildings, in accordance with Section 250.32(B).

N. Section 410.4(D) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 410.4(D) and substituting the following:

410.4(D) Bathtub and shower areas. No parts of cord-connected fixtures, hanging fixtures, lighting track, pendants, or ceiling fans shall be located within a zone measured 3 ft. (914 mm) horizontally and 8 ft. (2.44 m) vertically from the top of the bathtub rim. No switches shall be located within this zone unless the fixture is protected by ground-fault circuit interrupter protection for personnel. This zone is all encompassing and includes the zone directly over the tubs and/or shower areas.

O. Section 422.16 of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 422.16 and substituting the following:

422.16 Flexible cords. Cord- and plug-connected appliances shall use cords suitable for the environment and physical conditions likely to be encountered. Flexible cords shall only be used where the appliance is listed to be connected with a flexible cord. Specific appliances have additional requirements as specified in Table 422.16. The receptacles for the specific appliances contained in Table 422.16 shall be on a separate branch circuit. (See Section 210.23(A)(1)).

P. Table 422.16 of the 2002 Edition of the National Electrical Code is hereby amended by adding Table 422.16 as follows:

Table 422.16 FLEXIBLE CORD LENGTH APPLIANCE		
Minimum Cord Length (in)	Minimum Cord Length (in)	Maximum Cord Length (in)
18	18	18
36	36	48
36	36	48

Q. Section 422.33(A) of the 2002 Edition of the National Electrical Code is hereby amended by deleting Section 422.33(A) and substituting the following:

422.33(A) Equipment cord- and plug-connected or permanently connected. Permitted to be cord- and plug-connected or permanently connected. Wall-mounted ovens and counter-mounted cooking units complete with provisions for mounting and for making electrical connections shall be permitted to be permanently connected or, only for ease in servicing or for installation, cord- and plug-connected. These cooking units shall be served by a separate branch circuit.

Section 9. This Ordinance shall take effect from and after its final passage, the welfare of the Metropolitan Government of Nashville and Davidson County requiring it.

RECOMMENDED BY:

INTRODUCED BY:

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TERRENCE COBB  
DIRECTOR OF DEPARTMENT  
OF CODES ADMINISTRATION

APPROVED AS TO  
AVAILABILITY OF FUNDS:

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MEMBERS OF COUNCIL

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DAVID MANNING, DIRECTOR OF FINANCE

APPROVED AS TO LEGALITY OF FORM  
AND COMPOSITION:

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KARL F. DEAN, DIRECTOR OF LAW